

CLAIMS

1. A method for increasing an amount of useful data collected by a spacecraft comprising:
 - selecting a list of targets for which desired information is to be automatically acquired by said spacecraft;
 - acquiring data anticipated to correspond to said desired information for at least one of said targets on said list;
 - automatically processing said data on-board said spacecraft to determine whether said data contains at least a predetermined portion of said desired information.
2. The method of claim 1 further comprising the step of automatically discarding said data on-board said spacecraft if it does not contain at least a predetermined portion of said desired information.
3. The method according to claim 2 wherein said desired information is imagery and further comprising the step of acquiring data for targets on said target list where said imagery is forecast to be obscured by clouds.
4. The method according to claim 1 wherein said processing step further comprises applying a cloud detection algorithm to said acquired data to determine whether said data contains at least said predetermined portion of said desired information.
5. The method according to claim 1 wherein said desired information is an RF signal and further comprising the step of acquiring data for targets on said target

list where said RF signal is anticipated to potentially have a signal to noise ratio that is too low to allow useful information to be extracted.

6. The method according to claim 5 wherein said processing step is selected from the group consisting of performing a noise reduction algorithm to improve said signal to noise ratio, decoding data associated with said RF signal, and performing a voice recognition analysis, to determine whether said RF signal contains at least said predetermined portion of said desired information.

7. The method according to claim 1 wherein said desired information is an RF signal containing voice data and further comprising the step of acquiring data for targets on said target list where said RF signal is not certain to contain voice data of interest.

8. The method according to claim 7 wherein said processing step includes performing a voice recognition analysis to determine if said signal includes at least one of a voice of an individual of interest and specific words that are of interest.

9. The method of claim 1 wherein said selecting step further comprises selecting said list of targets so that a total volume of data associated with said list of targets for which said desired information is to be acquired exceeds a data storage capacity of said spacecraft.

10. The method according to claim 1 further comprising the step of recording said data in a data storage device.

11. The method of claim 10 further comprising the step of:
 assigning a predetermined priority value to each target on said list of targets;
 acquiring data anticipated to correspond to desired information for each of said targets on said list without regard to priority until a data storage capacity of

said spacecraft is exceeded and thereafter discarding said recorded data acquired for any one of said targets if said target has a priority value lower than a priority valued assigned to one of said target for which data is subsequently acquired.

12. A spacecraft, comprising:

control processor means responsive to a selected list of targets for controlling said spacecraft to acquire data anticipated to correspond to said desired information for at least one of said targets on said list; and

data processing means for automatically processing said data on-board said spacecraft to determine whether said data contains at least a predetermined portion of said desired information.

13. The spacecraft according to claim 12 further comprising means for automatically discarding said data if said data does not contain at least said predetermined portion of said desired information.

14. The spacecraft according to claim 13 wherein said desired information is imagery.

15. The spacecraft according to claim 14 wherein said control processor means causes said spacecraft to acquire data for targets on said target list where said imagery is forecast to be obscured by clouds.

16. The spacecraft according to claim 12 further comprising cloud detection means for analyzing said acquired data to determine whether said data contains at least said predetermined portion of said desired information.

17. The spacecraft according to claim 12 wherein said desired information is an RF signal and wherein said control processor causes said spacecraft to acquire data

for targets on said target list where said RF signal is anticipated to have a signal-to-noise ratio that is possibly too low to allow useful information to be extracted.

18. The spacecraft according to claim 17 further comprising processing means selected from the group consisting of noise reduction means for improving said signal to noise ratio, decoder means for decoding data associated with said RF signal, and voice recognition means for identifying at least one of a voice or a word.

19. The spacecraft according to claim 12 wherein said desired information is an RF signal and wherein said control processor causes said spacecraft to acquire data for targets on said target list where said RF signal is not certain to contain a voice or data of interest.

20. The spacecraft according to claim 19 wherein said data processing means comprises at least one of voice recognition means to determine if said RF signal carries speech of interest and a data decoder to determine if said RF signal carries data of interest.

21. The spacecraft according to claim 12 wherein a total volume of data associated with said list of targets for which said desired information is to be acquired exceeds a data storage capacity of said spacecraft.

22. The spacecraft according to claim 12 further comprising a solid state recorder storage device wherein said data is recorded.

23. The spacecraft according to claim 12 wherein said selected list of targets further comprises a predetermined priority value assigned to each target; and

wherein said spacecraft acquires data anticipated to correspond to desired information for each of said targets on said list without regard to said priority value until a data storage capacity of said spacecraft is exceeded.

24. The spacecraft according to claim 23 further comprising means for discarding said recorded data acquired for a lowest priority one of said targets after a data storage capacity of said spacecraft is exceeded.

25. The spacecraft according to claim 12 further comprising a communications receiver for receiving said selected list of targets for which desired information is to be acquired by said spacecraft.

26. A spacecraft, comprising:

a communications receiver for receiving a selected list of targets for which desired information is to be acquired by said spacecraft.

control processor means responsive to said selected list of targets for controlling said spacecraft to acquire data anticipated to correspond to said desired information for at least one of said targets on said list;

data processing means for processing said data on-board said spacecraft to determine whether said data contains at least a predetermined portion of said desired information; and

means for automatically discarding said data if said data does not contain at least a predetermined portion of said desired information.

27. The spacecraft according to claim 26 wherein said data processing means further comprises cloud detection means.

28. The spacecraft according to claim 27 further comprising means for determining a relative percentage portion of an image not obscured by clouds.

29. The spacecraft according to claim 28 further comprising means for comparing said percentage portion to a threshold value defining said minimum predetermined portion of said desired information.

30. The spacecraft according to claim 26 further wherein said selected list further comprises a predetermined priority value assigned to each target on said list of targets.

31. The spacecraft according to claim 30 wherein said control processor controls said spacecraft to collect data anticipated to correspond to desired information for each of said targets on said list without regard to said priority value until a data storage capacity of said spacecraft is exceeded.

32. The spacecraft according to claim 30 further comprising means for discarding said recorded data acquired for a lowest priority target after a data storage capacity of said spacecraft is exceeded and data is acquired for a higher priority target.

33. The spacecraft according to claim 26 wherein said desired information is an RF signal and wherein said control processor causes said spacecraft to acquire data for targets on said target list where said RF signal is anticipated to have a signal-to-noise ratio that is possibly too low to allow useful information to be extracted.

34. The spacecraft according to claim 33 further comprising processing means selected from the group consisting of noise reduction means for improving said signal to noise ratio, decoder means for decoding data associated with said RF signal, and voice recognition means for identifying at least one of a voice or a word.

35. The spacecraft according to claim 26 wherein said desired information is an RF signal and wherein said control processor causes said spacecraft to acquire data for targets on said target list where said RF signal is not certain to contain a voice or data of interest.

36. The spacecraft according to claim 35 wherein said data processing means comprises at least one of voice recognition means to determine if said RF signal carries speech of interest and a data decoder to determine if said RF signal carries data of interest.